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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,321	02/26/2002	Ling-Yuan Tseng	MR1115-381	3452

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EXAMINER

DI GRAZIO, JEANNE A

ART UNIT PAPER NUMBER

2871

DATE MAILED: 05/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,321

Applicant(s)

TSENG ET AL.

Examiner

Jeanne A. Di Grazio

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

Figures 6 and 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 4-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Jie et al.

(US '635 B1).

Per claim 1: Jie has the step of providing a substrate with pixel regions and pixels spaced apart from each other by non-reflective areas (Figure 3). Jie has a step of forming a coating of silicon nitride on a substrate and over pixels (Figures 8-10). Jie furthermore has the step of providing a mask over the silicon nitride layer to provide for regions where alignment posts are to be formed (See claim 1, lines 24-26). The alignment posts function as spacers (Col. 1, Lines 17-20, for example). Jie has the step of forming the alignment pillars via mask and photolithography in specified regions (Col. 2, Lines 44-46).

Per claims 4 and 5: The alignment posts comprise silicon nitride (Claim 7 of Jie).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jie et al. (US '635 B1) as applied to claim 1 above and in view of Tsuboyama et al. (US '225).

Per claims 2 and 3: Although Jie does teach transparent non-conductive optical interference layers made of varying layers of oxides and nitrides (Col. 3, Lines 29-42), Jin does not appear to specify that the alignment posts are made of silicon oxides / dioxides. However, Tsuboyama has spacers formed of SiO₂ (Col. 8, Line 19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Jin in view of Tsuboyama to form insulative spacers as noted in Tsuboyama and also for optical interference properties without the need for additional optical interference layers as suggested in the teachings of Jie (at Col. 3, Lines 18-27).

Claims 6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jie et al. (US '635 B1).

Per claim 6: Jie has the steps 2-4 as noted with respect to claim 1. Jie does not appear to have a substrate for each of at least two microdisplays; however, because Jie has a method for forming spacer posts on microdisplays, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Jin to have a substrate for each microdisplay or a plurality of microdisplays to improve yield and thus to lower cost. The Examiner notes that in

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claim 6, Applicant claims "the spacers of the substrates being not corresponding in location to each other" suggesting that the spacers could be staggered with respect to the substrates (See Figure 3 of Jie). In Figure 3 of Jie, the alignment posts are staggered and can correspond to various regions on a given substrate.

Per claims 9-10: The alignment posts comprise silicon nitride (Claim 7 of Jie). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include alignment posts of silicon nitride for optical interference properties without the need for additional optical interference layers as suggested in the teachings of Jie (at Col. 3, Lines 18-27).

Per claim 11: Jie has zones corresponding to non-pixel areas, in fact, the spacers / alignment posts are formed in between pixel regions (Col. 2, Lines 42-46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form spacers in non-pixel areas so as not to interfere with display quality.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jie et al. (US '635 B1) as applied to claim 6 above and in view of Tsuboyama et al. (US '225).

Per claims 7 and 8: Although Jie does teach transparent non-conductive optical interference layers made of varying layers of oxides and nitrides (Col. 3, Lines 29-42). Jin does not appear to specify that the alignment posts are made of silicon oxides / dioxides. However, Tsuboyama has spacers formed of SiO_2 (Col. 8, Line 19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Jin in view of Tsuboyama to form insulative spacers as noted in Tsuboyama and also for optical interference properties without the need for additional optical interference layers as suggested in the teachings of Jie (at Col. 3, Lines 18-27).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG

May 13, 2003


TOANTON
PRIMARY EXAMINER